Middle East HEALTH

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November-December 2016

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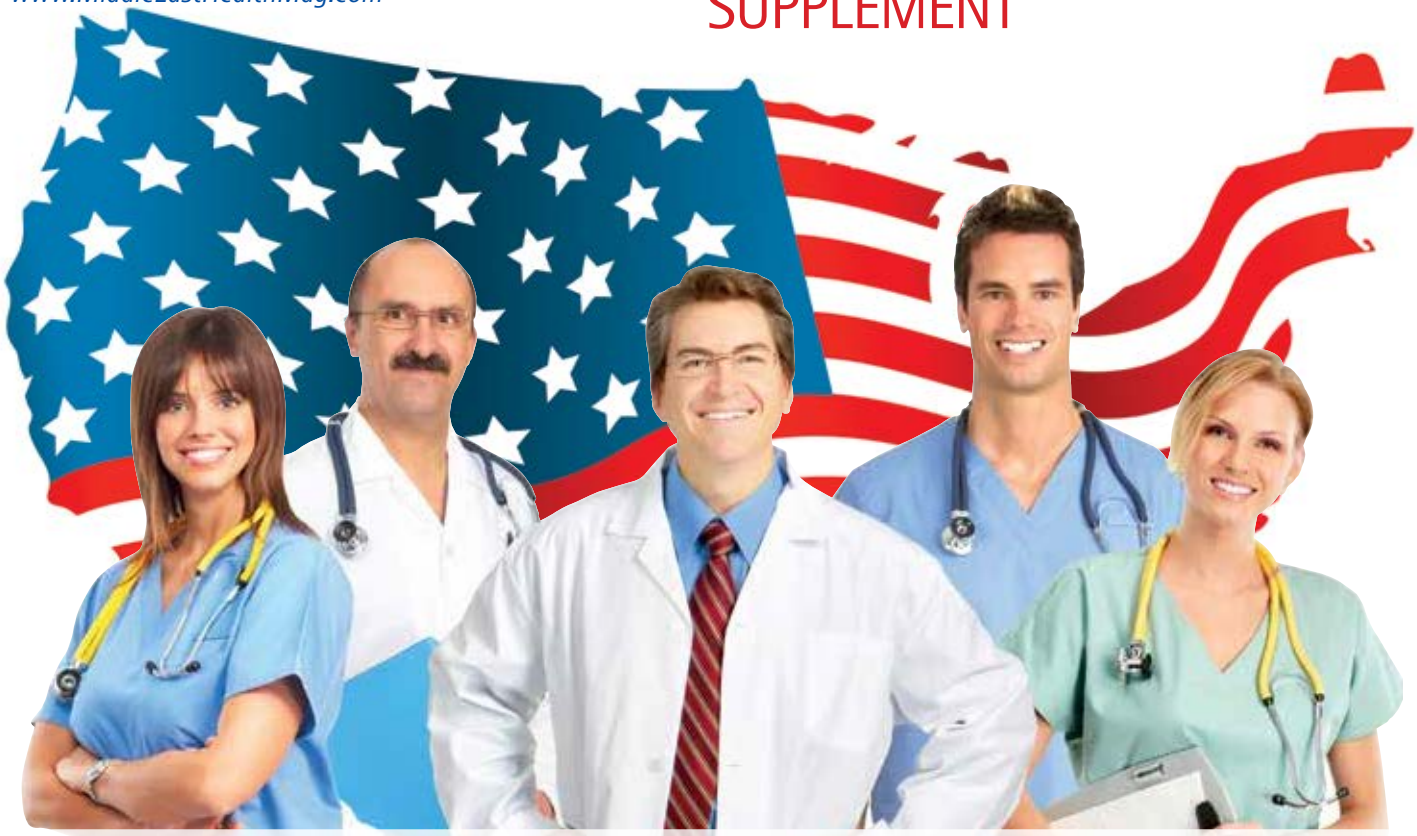
SUPPLEMENT



United States hospitals rated

US News ranking system helps patients choose best hospitals for inpatient care

Pushing the envelope

Leading US hospitals conduct research to provide most advanced healthcare

Bahrain BD3, **Egypt** £E40, **Iran** IRR75, **Iraq** IQD9,400, **Jordan** JD5, **Kuwait** KD3, **Lebanon** LBP12,000, **Oman** RO3, **Qatar** QR30, **Saudi Arabia** SR30, **Syria** £S400, **UAE** Dh30, **Yemen** YR1,600

Mayo Clinic Ranked #1 In the USA.

In the U.S. News & World Report rankings of top hospitals, Mayo Clinic is the #1 hospital overall, as well as #1 in more specialties than any other hospital in the USA. Our world-class experts work together to provide comprehensive care for patients with even the most complex conditions.

Learn more at **mayoclinic.org** or **mayoclinic.org/arabic**.

MAYO CLINIC

Rochester, Minnesota, USA

Based on U.S. News & World Report Best Hospitals Honor Roll, 2016-2017.

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NORTH AMERICAN HOSPITALS

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Publisher
Michael Hurst
michael@middleeasthealthmag.com

Editor
Callan Emery
editor@middleeasthealthmag.com

Editorial and Production
Trident Communications
www.TridentComms.media

Editorial Consultants
Dr Gamal Hammad, Dr Peter Moore, Harry Brewer

Middle East Editorial Office
PO Box 117943, Dubai, UAE
Telephone: (+9714) 334 6609
editor@middleeasthealthmag.com

Subscription & Admin Manager
Savita Kapoor
Telephone: (+9714) 391 4775 ▮ Fax: (+9714) 391 4888
savita@middleeasthealthmag.com

Advertising Sales
PO Box 72280, Dubai, UAE
marketing@middleeasthealthmag.com

Americas, France
Joy Sarkar,
P O Box 72280, Building No.2
2nd Floor, Dubai Media City
Dubai, United Arab Emirates
Tel: +971 4 391 4775 Fax: +971 4 391 4888
joy@middleeasthealthmag.com

Japan
Mr Katsuhiro Ishii
Ace Media Service Inc
12-6, 4-chome, Adachi-ku, Tokyo 121-0824, Japan
Tel: +81-3-5691-3335 ▮ Fax:+81-3-5691-3336
Email: *amskatsu@dream.com*

China
Miss Li Ying
Medic Time Development Ltd,
Flat 1907, Tower A, Haisong Building, Tairan 9th Road,
Futian District, Shenzhen, China 518048
Tel: +86-755-239 812 21 ▮ Fax: +86-755-239 812 33
Email: *medic8@medictime.com*

Taiwan
Larry Wang
Olympia Global Co Ltd
7F, No.35, Sec 3, Shenyang Rd, Taichung
Taiwan 40651 ▮ P O Box: 46-283 Taichung Taiwan 40799
Tel: +886- (4)-22429845 ▮ Fax:+886- (4)-23587689
Email: *media.news@msa.hinet.net*

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CHI St. Luke's Health: A new era in healthcare

The world-renowned Texas Medical Center (TMC) – the largest medical complex in the world with more than 7.2 million visits per year – is home to CHI St. Luke's Health-Baylor St. Luke's Medical Center (Baylor St. Luke's).

As part of a six-hospital health system, Baylor St. Luke's is a quaternary care facility in Houston that is dedicated to a mission of enhancing community health through high-quality patient care in caring for the whole person – body, mind, and spirit. Led by Wayne Keathley, President, Baylor St. Luke's has embarked on a new era in healthcare through significant alliances that position the hospital at the forefront of transforming the delivery of healthcare in Texas and the United States.

In the heart of the Texas Medical Center

Together, Texas Heart Institute, an internationally recognized leader in cardiovascular care and CHI St. Luke's Health-Baylor St. Luke's Medical Center (Baylor St. Luke's) form one of the largest heart centers in the world for research and treatment.

The strategic alliance with Baylor College of Medicine, one of the top medical schools in the United States, adds a level of research capabilities and collaboration that paves the way for even more revolutionary discoveries – from regenerative medicine to the development of next-generation medical devices.

History of making history

Since 1962, Texas Heart Institute, founded by Denton A. Cooley, MD in 1962, has been leading world-class physicians in performing research to better understand the diagnosis and treatment of cardiovascular disease. Now, CHI St. Luke's Health is continuing to make life-changing breakthroughs to:

- eliminate heart disease,
- discover more methods of prevention, and
- save more lives than in any other era in medical history.

Texas Heart Institute

- **FIRST** successful heart transplantation in the United States
- **FIRST** implantation in the world of an artificial heart in a human
- More than **100,000 open-heart procedures** performed
- **FIRST** in the U.S. to implant a pacemaker enclosed in a mesh envelope embedded with two antibiotic agents that provide site-specific antibiotic protection
- THI surgeon, Dr. O.H. "Bud" Frazier has performed **more heart transplants and left ventricular assist device implantations than any other surgeon in the world**

Cancer care

The Dan L. Duncan Cancer Center at Baylor College of Medicine offer the best minds in cancer treatment backed by the renowned researchers of Baylor, improved outcomes through comprehensive, personalized care, and access to the latest clinical trials. We are at the forefront of personalized medicine, replacing traditional treatments with targeted therapies based on each individual's unique biology and the exact characteristics of their cancer.

The National Cancer Institute awarded the Dan L. Duncan Cancer Center at Baylor College of Medicine the prestigious designation of a NCI-Designated Comprehensive Cancer Center. The comprehensive status designation moves the Duncan Cancer Center into an elite class of 45 centers from around the country whose programs demonstrate significant depth and breadth in basic, clinical and translational research, research into cancers most affecting their communities, clinical care, outreach and education activities, as well as cancer epidemiology and prevention programs.

Experts in the Lester and Sue Smith Breast Center at Baylor College of Medicine

Baylor St. Luke's Medical Center facts

- Ranked as one of **America's "Best Hospitals"** for Cardiology & Heart Surgery for 25 consecutive years by *U.S. News & World Report*.
- Member of **one of the nation's largest health systems**: Catholic Health Initiatives
- **FOUR**-time ANCC Magnet Designation for Nursing Excellence – highest honor bestowed to a hospital for nursing
- Cares for patients representing more than **70 countries around the globe**
- Collaborative partnership with Baylor College of Medicine one of the top medical schools in the U.S. and its Dan L. Duncan Cancer Center is a **NCI-Designated Comprehensive Cancer Center** – one of less than 50 in the nation
- **Home of Texas Heart Institute (THI)** featuring world-renowned physicians and the **birthplace of the world's first heart transplantation**
- To date, Baylor St. Luke's has performed **more than 250,000 cardiac catheterizations, 115,000 open-heart surgeries, and 1,200 heart transplants**
- Baylor St. Luke's and Texas Heart Institute have made some of the most important and **groundbreaking medical discoveries in cardiovascular history, including the nation's first successful heart transplant, the world's first artificial heart transplant, and unprecedented advancements in preventative care.**
- Recipient of **Get with The Guidelines – Stroke Silver Plus Quality Achievement Award** and the Target: Stroke Honor Roll Elite Achievement Award from the American Heart Association/American Stroke Association in 2015 for its **exceptional Comprehensive Stroke Program**
- Accredited by the **Intersocietal Accreditation Commission (IAC) in Nuclear Medicine, Nuclear Cardiology, and PET imaging.**

specialize in the prevention, diagnosis and treatment of breast cancer and benign breast disease. We are one of only a few comprehensive breast care centers in the country focused exclusively on prevention, diagnosis, and treatment of breast disease and breast cancer.

First lung institute in Texas

Baylor College of Medicine, NCI-Designated Comprehensive Cancer Center, and Baylor St. Luke's Medical Center have developed the first comprehensive, multi-specialty Lung Institute in Texas, with a team of specialists led by world-renowned lung disease expert and surgeon David Sugarbaker, MD. From asthma to lung cancer, the Institute offers advanced technology and individualized treatment, backed by Baylor's top-ranked genetics program, to patients from all over the world.

"If you've been told you have a difficult case, this is where you come," said Dr. Sugarbaker, Director of the Lung Institute and Professor and Chief of the Division of General Thoracic Surgery at Baylor College of Medicine. "Patients come to us based on the reputation of the Lung Institute team for providing hope as well as superb medical care in even the most difficult medical conditions."

The Institute combines experts from more than a dozen pulmonary, surgery and related specialties at Baylor College of Medicine and Baylor St. Luke's and taps into the resources of internationally recognized genetics and genome sequencing programs. This collaborative approach to lung disease treatment means that patients are provided more options for a course of treatment.

Neurosciences

The NeuroScience Center at Baylor St. Luke's takes a comprehensive approach to evaluation, treatment, and long-term management of neurological diseases, while providing the expertise of leading neurologists, neurosurgeons, neuroradiologists, and neurophysiologists.

Baylor St. Luke's houses specialized neuro-specific clinical units, which include a 20-bed Neuro-Intensive Care Unit, a 42-bed Neuro Acute Care Unit, and dedicated Neurosurgical operating room suites. All of the neuro-specific units have RNs that are NIH Stroke Scale certified. Interventional Neuroradiology at the NeuroScience Center has garnered international recognition for cutting-edge technology in the prevention and treatment of neurovascular diseases.

The Neurovascular Center, launched in 2005, offers multidisciplinary expertise from renowned interventional neuroradiologists. Neurointensivists, neurologists, and neurosurgeons all work collaboratively with neurointerventional radiologists to offer many treatment options for neurovascular disorders. In addition, they also work closely with internal hospital specialists to utilize diagnostic capabilities. Baylor St. Luke's is the first in Houston to operate CyberKnife in a clinical setting for treatment of intracranial tumors that continues to offer new hope to patients who have surgically complex tumors.

Business development initiatives

CHI St. Luke's offers clinical rotations for interested physicians and maintains affiliations with institutions and societies to benefit local communities through collaborative information exchange.

The International Services staff is available to answer your calls, faxes, and e-mails between the hours of 8 a.m. and 5 p.m. (Central Time), Monday through Friday (except U.S. holidays). If an emergency arises after office hours, dial the office number and the on-call international representative will assist you.

Contact us:

- Telephone: +1800-670-3924
- Fax: +1-832-355-3002
- *international@stlukeshealth.org*
- *www.stlukesinternational.org*

International services

International Services at Baylor St. Luke's extends a gracious welcome to patients and families from around the world. Our multilingual professional team stands ready to manage all your medical services needs and related matters to make your stay with us more pleasant.

Services

- Second opinion
- Physician appointments and scheduling
- Language assistance
- Hotel reservations and long-term housing
- Air travel and ground transportation
- Air ambulance assistance
- Business center for patient and family members (e-mail, fax machines, photocopiers)
- Spiritual support for all faiths
- Specialized in cultural needs
- Purchasing of medical equipment

Hospital ranking helps patients, referrers find skilled inpatient healthcare

U.S. News & World Report has released its 27th annual Best Hospitals rankings to help patients make more informed healthcare decisions. U.S. News compared nearly 5,000 medical centers across the United States in 25 specialties, procedures and conditions.

This year the Mayo Clinic in Rochester, Minnesota, is No. 1 on the Honor Roll, which has been expanded to highlight 20 hospitals delivering exceptional treatment across multiple areas of care. The Cleveland Clinic is No. 2, followed by Massachusetts General Hospital at No. 3.

In the specialty rankings, University of Texas MD Anderson Cancer Center is No. 1 in cancer, the Cleveland Clinic is No. 1 in cardiology & heart surgery and the Hospital for Special Surgery is No. 1 in orthopedics. A total of 153 hospitals were nationally ranked in at least one specialty.

Methodologies

The Best Hospitals ranking methodologies include objective measures such as patient survival, number of patients, infection, adequacy of nurse staffing and more. In 2016, U.S. News evaluated more than 4,500 hospitals across more than 75 measures of care to generate the procedure and condition ratings. While 1,628 hospitals were rated high performing in at least one procedure or condition, only 63 were rated high performing in all nine procedures and conditions.

There were a number of methodology updates made for 2016-17 ranking, which include:

- Hospitals evaluated in four new areas: abdominal aortic aneurysm repair, aortic valve surgery, colon cancer surgery and lung cancer surgery.
- Further adjustments made to account for the socioeconomic mix of patients treated at hospitals. As a result, a hospital will not be negatively impacted if it sees large numbers of low-income patients.
- U.S. News credited hospitals that voluntarily make key data public in cardiology & heart surgery. The change reduced the weight reputation has in the specialty.

U.S. News says their rankings provide a tool to help patients find especially skilled inpatient care. A useful example of the type of patient they refer to is 'an elderly woman with pancreatic cancer. Most hospitals would decline to operate on her – as they should if their surgeons lack the expertise to remove the cancer without harming the rest of the fragile pancreas. But others would go ahead, possibly at considerable risk to her. She would be better served by one of the hospitals in the Best Hospitals cancer rankings, which see a steady stream of patients like her,' the report says.

Ben Harder, chief of health analysis at U.S. News, said: "We strive to provide patients with the highest-quality information on hospitals available. Driving for broader transparency and evaluating hospitals in a comprehensive, fair way reflects that mission."

The report notes that a high-ranking hospital is not always the best choice and explains that hospitals are evaluated across a wide range of conditions and procedures. Within that range, hospitals can and do perform differently. In pulmonology, for example, a hospital might rank below another one but do better at treating patients with chronic obstructive pulmonary disease.

U.S. News explained that they use a variety of measures to evaluate each hospital's performance. Some data came from the federal Centers for Medicare & Medicaid Services' MedPAR database. Other information came from the American Hospital Association and from professional organizations.

"We put the heaviest reliance on outcomes; whether a patient survives a hospital experience is clearly connected to the quality and safety of the hospital's care. Other data, such as the number of patients and the balance of nurses and patients, are less obviously related to quality and safety, but ample research supports the connection. The physician survey also played a role, although it accounted for only slightly more than one-fourth of each hospital's score," says the report.

U.S. News builds in risk adjustment

A number of risk factors into taken into account, including low socioeconomic status:

- **Age at admission**.
- **Sex**.
- **Transfer status**. A patient transfer from the initial receiving hospital may indicate a complex procedure or condition. Patients were classified as inbound transfers if they were treated at another acute-care hospital on the day of admission, if claims data indicated they were transferred or if a previous claim indicated an outbound transfer.
- **Bilateral joint replacement**. Indicated by a claim for two replacements of the same joint on the same date.
- **Year of hospital admission**. Quality of care tends to improve over time. This means the risk of adverse outcomes is less year to year. For that reason, year of admission is

2016–17 Best Hospitals Honor Roll

1. Mayo Clinic, Rochester, Minn.
2. Cleveland Clinic
3. Massachusetts General Hospital, Boston
4. Johns Hopkins Hospital, Baltimore
5. UCLA Medical Center
6. New York-Presbyterian University Hospital of Columbia and Cornell
7. UCSF Medical Center, San Francisco
8. Northwestern Memorial Hospital, Chicago
9. Hospitals of the University of Pennsylvania-Penn Presbyterian, Philadelphia
10. NYU Langone Medical Center
11. Barnes-Jewish Hospital/Washington University, St. Louis
12. UPMC Presbyterian Shadyside, Pittsburgh
13. Brigham and Women's Hospital, Boston
14. Stanford Health Care-Stanford Hospital, Stanford, Calif.
15. Mount Sinai Hospital, New York
16. Duke University Hospital, Durham, N.C.
17. Cedars-Sinai Medical Center, Los Angeles
18. University of Michigan Hospitals and Health Centers, Ann Arbor
19. Houston Methodist Hospital
20. University of Colorado Hospital, Aurora

included as a risk factor.

- **Comorbidities**. A wide range of comorbidities such as diabetes are associated with higher death rates. They used an inventory known as the Elixhauser comorbidities in risk adjustment.
- **Medicare status code**. The reason or reasons why the patient is eligible for Medicare: age, disability or end-stage renal failure. This is a proxy for comorbidities.
- **Method of admission**. Patients admitted through the ER may experience different outcomes from elective admissions.
- **Socioeconomic status**. Patients with lower incomes and education are typically sicker when they arrive at the hospital, and may face more challenges in obtaining or managing their care after they are discharged. This can affect their risk of death, readmission and complications. When hospitals differ by the socioeconomic status of their patients, this can create bias in comparing outcomes. They used "dual eligibility" – patients who are eligible for both Medicare and Medicaid – as a socioeconomic factor.

on the WEB Best Hospitals in the United States
http://health.usnews.com/best-hospitals

Ranking by specialty

The 16 Best Hospitals specialty rankings are updated annually. Rankings in 12 of the 16 rely largely on objective data. Each specialty showcases the 50 top-scoring hospitals based mostly on death rates for patients who represent especially challenging cases, on patient safety and on other measures of performance that can be assessed using hard data.

The specialties include:

1. Cancer
2. Cardiology & Heart Surgery
3. Diabetes & Endocrinology
4. Ear, Nose & Throat
5. Gastroenterology & GI Surgery
6. Geriatrics
7. Gynecology
8. Nephrology
9. Neurology & Neurosurgery
10. Ophthalmology
11. Orthopedics
12. Psychiatry
13. Pulmonology
14. Rehabilitation
15. Rheumatology
16. Urology

Best Children's Hospitals

The 2016-17 rankings were created from data collected through a clinical survey sent to 183 hospitals and a reputational survey sent to pediatric specialists and subspecialists.

Hospital	Rank
Boston Children's Hospital	1
Children's Hospital of Philadelphia	2
Cincinnati Children's Hospital Medical Center	3
Texas Children's Hospital, Houston	4
Seattle Children's Hospital	5
Ann and Robert H. Lurie Children's Hospital of Chicago	6
Children's Hospital Los Angeles	7 - tied
Children's Hospital of Pittsburgh of UPMC	7 - tied
Children's Hospital Colorado, Aurora	9
Lucile Packard Children's Hospital at Stanford, Palo Alto, Calif.	10 - tied
Nationwide Children's Hospital, Columbus, Ohio	10 - tied

The *US News and World* also provides complete rankings in 10 pediatric specialties. Following are the top hospitals in each pediatric specialty.

- **Cancer**: Dana-Farber Boston Children's Cancer and Blood Disorders Center
- **Cardiology & Heart Surgery**: Boston Children's Hospital
- **Diabetes & Endocrinology**: Children's Hospital of Philadelphia
- **Gastroenterology & GI Surgery**: Boston Children's Hospital
- **Neonatology**: Boston Children's Hospital
- **Nephrology**: Boston Children's Hospital
- **Neurology & Neurosurgery**: Boston Children's Hospital
- **Orthopedics**: Boston Children's Hospital
- **Pulmonology**: Texas Children's Hospital
- **Urology**: Boston Children's Hospital MEH

Top Five Best Hospitals in selected specialties

Top 5: Cancer

1. University of Texas MD Anderson Cancer Center, Houston
2. Memorial Sloan Kettering Cancer Center, New York
3. Mayo Clinic, Rochester, Minn.
4. Dana-Farber/Brigham and Women's Cancer Center, Boston
5. UCLA Medical Center

Top 5: Cardiology & Heart Surgery

1. Cleveland Clinic
2. Mayo Clinic, Rochester, Minn.
3. New York-Presbyterian University Hospital of Columbia and Cornell
4. Massachusetts General Hospital, Boston
5. Duke University Hospital, Durham, N.C.

1. Hospital for Special Surgery, New York
2. Mayo Clinic, Rochester, Minn.
3. Cleveland Clinic
4. Rush University Medical Center, Chicago
5. Hospital for Joint Diseases, NYU Langone Medical Center, New York

Cerebral palsy – the most common physical disability in children

Cerebral palsy (CP) is the name for a series of neurological disorders caused by abnormalities in parts of the brain that control muscle movement. It is the most common form of physical disability in childhood, being present in two of every 1,000 children. Symptoms can range from mild to severe both in physical and mental capacities. In mild cases a single limb may be affected. In more severe cases, all four limbs and almost all functional aspects of the child are affected. CP is usually caused by brain damage that occurs before or during a child's birth, or during the first 3 to 5 years of a child's life. The brain damage that leads to cerebral palsy can also lead to other health issues, including vision, hearing and speech problems and learning disabilities.

Cerebral palsy affects muscle control and coordination, so even simple movements – or standing still – are difficult. Other vital functions that also involve motor skills, such as breathing, bladder and bowel control, eating, and learning, also may be affected when a child has CP. Cerebral palsy does not get worse over time.

The causes of most cases of CP are unknown, but many are the result of problems during pregnancy. This can be due to infections, maternal health problems, a genetic disorder, or something that interfered with normal brain development. Problems during labour and delivery can cause CP, but this is the exception.

Premature babies – particularly those who weigh less than 3.3 pounds (1,510 grams) – have a higher risk of CP than babies that are carried full-term, as are other low-birth-weight babies and multiple births (twins, triplets, etc.). Brain damage in infancy or early childhood can also lead to CP. A baby or toddler might suffer damage because of lead poisoning, bacterial meningitis, malnutrition, being shaken as an infant, or being in a car accident while not properly restrained.

Associated medical problems

Children with CP have varying degrees of physical disability. Some have only mild impairment, while others are severely affected. The brain damage that causes CP can also affect other brain functions, and can lead to further medical issues. Associated medical problems may include visual impairment or blindness, hearing loss, food aspiration, gastroesophageal reflux, speech problems, drooling, tooth decay, sleep disorders, osteoporosis and behaviour problems.

Seizures, speech and communication problems, and mental retardation are more common among kids with the most severe forms of CP. Many have problems that may require ongoing therapy and devices such as braces or wheelchairs.

Collaborative approach

Currently there's no cure for cerebral palsy, but a variety of resources and therapies can provide help and improve the quality of life for kids with CP. Children with neuromuscular disabilities require the collaborative approach of a multidisciplinary team. Because cerebral palsy symptoms can vary from child to child, children with cerebral palsy need specialized care tailored to their own individual needs.

As soon as CP is diagnosed, patients should begin therapy for movement, learning, speech, hearing, and social and emotional development. Paediatric cerebral palsy treatment also may include medication, surgery or braces to help improve muscle function. Different kinds of therapy can help them achieve maximum potential in growth and development.

Orthopaedic surgery can help address deformities of hips, knees, feet and scoliosis (curvature of the spine), which are common problems associated with CP. Severe muscle spasticity can sometimes be helped with medication taken by mouth or administered via a pump implanted under the skin.

A variety of medical specialists might be needed to treat the different medical conditions. If several medical specialists are needed, it's important to have a primary care doctor or a CP specialist help you coordinate the care. MEH

Nemours – Children's Health System

Nemours is committed to improving the health of children. As a non-profit children's health organization, we consider the health of every child to be a sacred trust.

Through family-centred care in our children's hospitals and clinics in Delaware, New Jersey, Pennsylvania and Florida, as well as world-changing research, education and advocacy, Nemours fulfils the promise of a healthier tomorrow for all children – even those who may never enter our doors.

www.nemours.org

Children deserve the best care possible no matter where they live. That's why doctors and families around the world turn to Nemours. As an internationally recognized children's health organization, we provide highly specialized pediatric care with compassion and respect for each child and their family's unique health, cultural and financial needs. Our Nemours/Alfred I. duPont Hospital for Children is consistently rated among the best children's hospitals in the nation by *U.S. News & World Report*. It is the Nemours promise to help every child, everywhere, have a healthier and happier future.

Nemours International Medicine Program:
Expedited appointments with a specialist are available.
InternationalMedicine@Nemours.org
+1 (302) 651-4993

Nemours.
Children's Health System
Your child. Our promise.

Houston Methodist's innovative research, technology and treatments impact patients today – and in the future

Houston Methodist is committed to providing patients from all over the world advanced, personalized care. The hospital's dedicated team of doctors and researchers collaborate in all areas, from reimagining decades-old medical techniques to inventing new options for patients who previously had none.

Houston Methodist was recognized by *U.S. News & World Report* this year as one of the USA's top 20 hospitals, placing it for the second time on the magazine's prestigious Honor Roll. Houston Methodist is nationally ranked in 10 specialties including cancer, cardiology & heart surgery, diabetes & endocrinology, gastroenterology & GI surgery, geriatrics, nephrology, neurology & neurosurgery, orthopedics, pulmonology, and urology. Five of these specialties are ranked in the top 20 nationwide.

The nationally recognized team at the Houston Methodist Cancer Center is dedicated to providing its patients the best possible care by diagnosing, treating and researching the most common types of cancer, including breast, lung, prostate and brain cancers, using the most advanced techniques available. Houston Methodist's specialists create customized treatment plans to fight cancer, and their highly skilled support staff helps patients recover physically and emotionally.

Physician-scientists at Houston Methodist Cancer Center are among leading researchers worldwide studying methods and treatments to coax the body's immune system to fight cancer cells. Specialists are working to successfully stimulate the immune system to kill cancer cells without the toxicity and side effects associated with more traditional therapies, such as radiation and chemotherapy.

Dedicated doctors, nurses and medical staff value the state-of-the-art care and therapies provided, and continually strive to advance discoveries. Houston Methodist is committed to research and clinical trials that could improve cancer care.

Through pioneering research, individualized treatment plans and compassionate care, doctors at the Houston Methodist Cancer Center are steadfast in their mission to eradicate cancer and support those who have it. The center is one of Houston Methodist's six centers of excellence – emphasizing medical care, research and academics.

Regenerative medicine

While Houston is internationally known for being at the apex of cancer treatment, the city is also quickly establishing itself as a leader in regenerative medicine. At its core, the regenerative medicine is focused on finding new ways to help the body repair itself, often through the use of stem cells. Scientists at Houston Methodist are hoping to someday restore hand function to paralyzed patients by using stem cells to help repair the spinal cord.

In heart care, Houston Methodist's leading cardiologists, cardiovascular surgeons and other experts work together to give patients the best care today while fostering a brighter tomorrow through research and innovation in cardiovascular disease. Specialists offer the most effective and compassionate care available, striving to be the premier international benchmark for cardiology and cardiovascular surgery. Patients from around the world choose Houston Methodist DeBakey Heart & Vascular Center for access to state-of-the-art resources at Houston Methodist Hospital in the Texas Medical Center.

And when it comes to treating diabetes – one of the GCC's most costly epidemics, Houston Methodist's nationally recognized specialists partner with patients to prevent diabetes, provide patient education to increase awareness of this often hidden disease. The physicians and health care professionals at Houston Methodist use state-of-the-art technology to diagnose and treat all forms of diabetes-related disorders to give people the normal, healthy life they deserve. MEH

YOUR HEALTH IS IMPORTANT. SO IS THE HOSPITAL THAT CARES FOR IT.

At Houston Methodist, our team of specialists is devoted to the highest level of care for our patients. Our excellence in complex specialty care is one of the reasons why we're ranked among the top 20 hospitals in the nation. So join the 28,000 patients from 50 states and 90 countries who traveled last year to receive the leading care that only Houston Methodist can provide.

Learn more about Houston Methodist online at **houstonmethodist.org/global** or call **+1.713.441.2340**.

HOUSTON Methodist
LEADING MEDICINE

BEST HOSPITALS
U.S.News
HONOR ROLL
2016-17

CANCER • CARDIOLOGY & HEART SURGERY • DIABETES & ENDOCRINOLOGY • GASTROENTEROLOGY & GI SURGERY
GERIATRICS • NEPHROLOGY • NEUROLOGY & NEUROSURGERY • ORTHOPEDICS • PULMONOLOGY • UROLOGY

Mayo Clinic ranked No. 1 hospital in the United States

Mayo Clinic has been named the best hospital in the United States in U.S. *News & World Report's* annual list of top hospitals. In addition, Mayo Clinic is ranked No. 1 in more specialties than any other hospital in the U.S.

Mayo Clinic is part of a select group on the *U.S. News* Honor Roll recognized for "breadth of excellence," according to the magazine. To make the "honor roll," a medical center must rank at or near the top in at least six of 16 specialties.

Mayo Clinic was first overall in the magazine's annual honor roll ranking of its 2016-17 Best Hospitals list and was ranked No. 1 in eight specialties:

- Diabetes and Endocrinology
- Gastroenterology and GI surgery
- Geriatrics
- Gynecology
- Nephrology
- Neurology and Neurosurgery
- Pulmonology
- Urology

Mayo Clinic has more No. 1 rankings than any other provider based on factors such as reputation, mortality index, patient safety, nurse staffing and Magnet status, patient services and technology. Mayo Clinic physicians, scientists, researchers, educators and allied health staff members work together in a team-based model to deliver the highest standards of care and transform scientific discoveries into critical advances for unmet patient needs.

Additionally, Mayo Clinic has been ranked No. 2 in three more specialties – cardiology and heart surgery, ear, nose and throat, and orthopedics – and No. 3 in cancer.

"We are honored to be recognized in this way, as it reflects the tremendous work of our staff every day in caring for our patients and their families," says John Noseworthy, M.D., president and CEO of Mayo Clinic. "This ranking is a testament to the dedication and excellence of all of our Mayo Clinic staff."

Mayo Clinic is a non-profit worldwide leader in medical care. Each year, thousands of patients from around the world travel to Mayo Clinic locations in the U.S., including Minnesota, Florida and Arizona, for medical care. Patients traveling internationally are provided timely diagnostic and specialty care in a place designed to feel a little more like home. Here, patients have access to all medical and surgical sub-specialties within a single institution, empowering the medical team to address all the patient's health needs and treat the whole person. Patients are cared for with a breadth of expertise and technology that reflects why Mayo Clinic is the trusted leader in healthcare worldwide.

■ For more information or to make an appointment, visit: *mayoclinic.org* or *mayoclinic.org/arabic*

Patients traveling internationally are provided timely diagnostic and specialty care in a place designed to feel a little more like home.

A brain tumor was threatening his sight, but we gave him a new vision.

Most of us take the little things we do every day for granted until a neurological disorder makes them impossible. The neurospecialists at Baylor Neuroscience Institute at Baylor St. Luke's Medical Center are using breakthrough research, a collaborative approach and innovative techniques to recover function that is lost due to a brain tumor, Parkinson's Disease, epilepsy, stroke and aneurysm. Because discovering more ways to give back to our patients what matters most to them is second nature to us.

Discover more at
ImagineBetterHealth.org

CHI St. Luke's Health
Baylor St. Luke's Medical Center
Imagine better health.℠

Email: international@stlukeshealth.org
tel: 1-800-670-3924
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Texas Medical Center, Houston, Texas - USA

Baylor College of Medicine
NEUROSCIENCE INSTITUTE

Research ensures innovation

Clinical research is an integral part of healthcare. It ensures continued innovation in diagnosis and treatment for the benefit of the patient. The leading hospitals in the United States all have highly respected research programs. To provide a brief example of this, we look at two studies – a study at Children's Hospital of Pittsburgh UPMC on autoimmune disease and a study at Johns Hopkins Children's Center on sedation in children.

Boosting early mobility in children after sedation

Pediatric critical care specialists at Johns Hopkins report that a test of their pilot program to reduce sedation and boost early mobility for children in an intensive care unit proves it is both safe and effective.

In a summary of the research, published October 12, 2016 in *Pediatric Critical Care Medicine* (doi: 10.1097/PCC.0000000000000983), investigators at the Johns Hopkins Children's Center say their PICU Up! Early Rehabilitation and Progressive Mobility Program is intended to maintain or restore musculoskeletal strength and function. It includes activities such as sitting at the edge of the bed, standing, moving from bed to chair, walking and playing with toys.

The program demonstrated such success that other centers across the globe have contacted the research team for help implementing the program in their own institutions.

"We've long underestimated what children in pediatric intensive care units (PICUs) can safely do," says Sapna Kudchadkar, M.D., assistant professor of anesthesiology and critical care medicine, director of the pediatric critical care clinical research program at the Johns Hopkins University School of Medicine and the study's senior author.

"The prevailing belief is that children in the PICU should be heavily sedated to protect them from all of the stressors, such as the tubes, the strangers and the physical pain. But fluctuating between a state of awareness and sedation can cause delirium, physical weakness and post-traumatic stress disorder."

"The fact that even a few orally intubated children who were previously heavily sedated could be awake, alert and lucid enough to walk is likely to be an eye-opener for clinicians," says Kudchadkar.

The team reported that the program also resulted in increased rates of physical and occupational therapy consultations, from 54% to 66% and 44% to 59%, respectively.

Kudchadkar also noted the impact of the program on PICU patients' families, increasing opportunities for meaningful time together.

Kudchadkar says her team's finding demonstrate that "liberating" children in PICUs from heavy sedation as soon as possible and getting them moving earlier is possible and safe, but she acknowledges the challenge to conventional wisdom the new program poses. MEH

Autoimmune disease

An imbalance in the reciprocal relationship between common gut bacteria and certain immune cells can set the stage for the development of autoimmune inflammation, according to a study conducted by researchers at Children's Hospital of Pittsburgh of UPMC and the University of Pittsburgh School of Medicine, who published their findings recently in *Immunity* (doi: 10.1016/j.immuni.2016.02.007).

Scientists have known bacteria and other microorganisms, or microbiota, drive the development of the immune system in the intestine, said senior investigator Jay Kolls, M.D., director of the Richard King Mellon Foundation Institute for Pediatric Research at Children's Hospital and professor of pediatrics at Pitt School of Medicine.

In particular, segmented filamentous bacteria (SFB) play a critical role in the production of T-helper (Th) immune cells that make interleukin-17, which is a signaling molecule that promotes inflammation. According to the researchers, these Th17 immune responses have been implicated in many human autoimmune diseases, including arthritis, multiple sclerosis and inflammatory bowel diseases.

"Because many infectious agents are introduced into the body through the intestine and certain bacteria are essential for proper intestinal function, there is intense interest in understanding the role of the gut microbiome in health and disease," Dr Kolls said. "Our study demonstrated these Th17 cells in turn control the gut's SFB burden, and disruptions in the balance between them can have important consequences."

For the study, the team engineered mice lacking the receptor for IL-17 in cells of the gastrointestinal tract, preventing the molecule from binding to the cells and blocking IL-17 signaling. That led to an overgrowth of SFB in the gut. Further testing showed that the absence of IL-17 signaling triggered other intestinal immune defects, creating an environment in which IL-17 could cause intestinal inflammation.

"These findings could have a tremendous impact on our understanding of how intestinal and autoimmune disorders develop," said Dr Kolls..

George Mazariegos, MD, FACS, director of the Hillman Center for Pediatric Transplantation at Children's Hospital of Pittsburgh of UPMC and Transplant Surgeon Kyle Soltys, MD, perform a living-donor liver transplant on a young patient.

Liver transplantation: A pathway to cure for paediatric metabolic disorders

An 8-year-old boy from Qatar with propionic acidemia (PA) was transferred in serious condition to Children's Hospital of Pittsburgh of UPMC in the United States for evaluation and care. A team of specialists determined that his metabolic disease was causing his heart to fail, and liver transplant was identified as a solution. His mother, a viable candidate, stepped forward as a living donor, providing a segment of her liver to be transplanted into her son. Today, the mother's liver function is fully recovered as her son continues to recuperate. His cardiac condition is significantly improved.

This example illustrates two significant developments with regard to liver transplantation – the ability for liver transplants to be used as a treatment for metabolic disorders, such as PA, and the growing impact of living donor transplants to help resolve critical medical situations in a timely fashion.

Liver transplants have been successfully performed in humans since the 1980s and were initially developed as a therapy for liver diseases that had a high risk of near-term mortality, such as biliary atresia, tumours, or acute liver failure.

Today, however, liver transplantation is finding an expanding role as treatment for a growing number of inborn metabolic diseases. Rather than viewing liver transplants exclusively as a life-saving procedure, it can now be seen as a "life-improving" therapy, providing a new pathway to health by dramatically reducing symptoms of primary disorders and, in some cases, even providing a complete cure. Concurrent with this is the greater reliance on and positive outcomes derived from transplanted liver tissue from living donors.

The use of tissue from living donors, in particular, helps achieve success in multiple ways, including: reduced wait times; more positive outcomes, which may be related to genetic matching from healthy living related donors; and providing an alternative to use of tissue from deceased donors, which are a scarce resource.

Metabolic conditions treated by liver transplant

Metabolic diseases are generally caused by a defect in a single or multiple genes that are supposed to instruct enzymes to convert one substance into another. Here, liver transplantation can help for disorders that are liver-specific as well as for systemic disorders, where liver replacement can result in sufficient metabolic support to normalize metabolism.

Known examples where liver transplants can provide a therapeutic option include methylmalonic acidemia (MMA), Maple Syrup Urine Disease (MSUD), urea cycle disorders (UCDs), Crigler-Najjar Syndrome, selected mitochondrial disease, alpha-1 antitrypsin disease, as well as PA. Additionally, certain glycogen storage diseases (GSD) and phenylketonuria (PKU) show potential for improvement through liver transplantation.

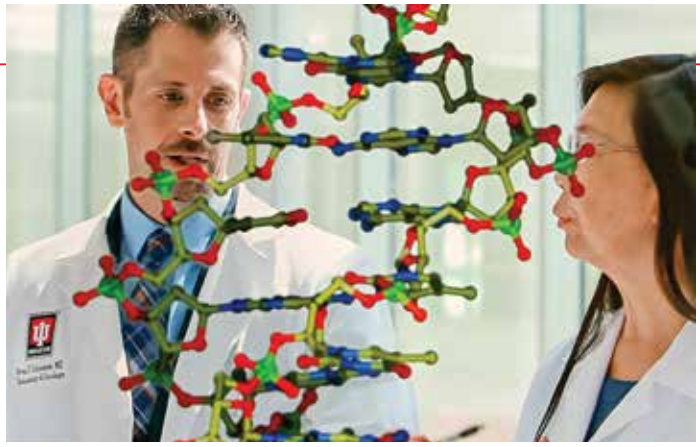
Many of these conditions can be medically managed, but they can have serious and sometimes fatal consequences if not treated. In some cases, medical management may be done through a very carefully controlled low-protein diet that includes special supplements required for the rest of the patient's life. Such medical therapy can mean life-limiting compromises for the patient, including vigilant blood monitoring, dietary restrictions, travel limitations, and ongoing concerns that a misstep in therapeutic adherence may have dire health consequences.

With a history of paediatric liver transplants, spanning back to 1981, Children's Hospital of Pittsburgh of UPMC has conducted more than 320 liver transplants for metabolic disease alone and more than 1,700 paediatric liver transplants in all, more than any other paediatric centre in the United States. Building on its experience with liver transplants for metabolic disorders, Children's collaborated with the Clinic for Special Children in Strasburg, Pennsylvania, to create the first elective liver transplantation protocol for patients with MSUD in 2004, and has since conducted more than 65 transplants for MSUD patients with 100 percent graft and patient survival rates.

Conclusion

Today as the risks of liver transplant have decreased and post-operative outcomes have improved, the procedure has evolved into an attractive approach for improving life for patients with a growing number of metabolic diseases. The range of disorders suitable for this approach continues to evolve as the medical community, patients, and their families balance traditional medical management versus surgical intervention that may favourably impact their disease. And, while living-donor transplants can help overcome the ongoing demand shortfall for traditional cadaveric organs, their greater role may ultimately be in helping to provide better long-term outcomes for the patients who receive them. MEH

Multidisciplinary team leads the way in personalized medicine with Precision Genomics program



Indiana University Health partners with Indiana University School of Medicine, the largest medical school in the U.S., to give our physicians and patients access to innovative treatments and leading edge therapies. The Precision Genomics program at IU Health is the only program in the U.S. to do full genomic sequencing for patients, which can reveal the inner-workings of each unique cancer case.

When treating late-stage cancer, or when traditional therapies have not worked, the multidisciplinary team can now implement a specialized approach for treatment based on the patient's DNA. By identifying the right drug, for the right person, at the right time, they can recommend a more effective treatment plan.

As a leader in this exciting new field, IU Health is accelerating the future of cancer treatment for patients. Our innovative approach goes above and beyond for our patients, ensuring they receive the best possible care in a comfortable, welcoming environment.

A leading hospital for international patients

IU Health has been ranked by *U.S.News & World Report* in the top 3% of hospitals in the U.S. We complement our highly skilled surgeons and leading edge operating facilities with compassionate professionals who help our international patients and their families feel welcome.

With the help of IU Health International Patient Services, patients come from around the world to Riley Hospital for Children at IU Health to receive care. A specially trained international Patient Coordinator and the concierge services staff serves as liaisons to ensure a seamless and positive customer experience for international patients and their families – including cultural and religious accommodations. From advising throughout travel to helping to schedule the first appointment, the goal is to ensure an exceptional experience.

Our International Patient Coordinators help international patients stay focused on their treatment, recovery and wellness while visiting Indianapolis.

Getting started

Visit *iuhealth.org/international* for more information. To speak with an IU Health International Patient Services team member call +1.317.963.2020 or email *international@iuhealth.org*

To begin processing, complete the IU Health International Patient Information Form at *iuhealth.org/international* MEH

At IU Health, our innovative approach and dedication to international patient care knows no boundaries, providing a full range of specialty care services for children and adults, including:

Cancer
IU Health Cancer Centers are Indiana's largest network of cancer specialists and are connected through IU Health Simon Cancer Center.

Cardiovascular
Our Cardiovascular specialists treat some of the most complex cases, combining the latest technology with advanced procedures.

Diabetes and Endocrinology
Our highly skilled endocrinologists care for international patients with diabetes and other serious disorders of the endocrine system.

Ear, Nose and Throat
IU Health physicians have unmatched expertise in treating disorders and diseases such as head and neck cancer, hearing loss, sinus disease, snoring, sore throats and more.

Gastroenterology
Our nationally ranked program has expertise that includes diagnosing and treating all types of GI, liver and pancreatic diseases.

Neuroscience
As a nationally ranked neurology and neurosurgery program, IU Health expertly treats common and complex disorders of the brain, spine, nerves and muscles.

Orthopedics & Sports Medicine
Our unique partnership with the IU School of Medicine provides faster access to advanced therapies and innovative treatments for major and minor orthopedic conditions.

Pediatrics
Riley Hospital for Children at IU Health is recognized in 10 pediatric specialties by *U.S.News & World Report*. Our experienced physicians and nurses have expertise in every field of pediatric medicine and surgery.

Pulmonology
The nationally ranked IU Health pulmonology program diagnoses and treats lung conditions and respiratory diseases with innovative treatment options and testing.

Urology
The urology program offers advanced procedures and technologies. Many have been developed or perfected in our leading edge facilities.

GOING ABOVE AND BEYOND FOR INTERNATIONAL PATIENTS

Innovation and expertise that's known nationwide and all throughout the world.

As one of the largest and most comprehensive academic healthcare systems in the United States, Indiana University Health offers a full range of specialty and primary care services for children and adults. Our unique partnership with Indiana University School of Medicine, the largest medical school in the U.S., gives our physicians access to innovative treatments and leading edge therapies. At Riley Hospital for Children at IU Health, we provide compassionate care in a welcoming environment for children and their families visiting from all over the world. You'll find us in Indianapolis, IN, the nation's 13th largest city, known for its thriving restaurant and entertainment scene.

To speak with our International Patient Concierge, call **+1.317.963.2020** or visit **iuhealth.org/international**

Indiana University Health

BEST HOSPITALS U.S.News NATIONAL RANKED IN 8 SPECIALTIES 2016-17

BEST CHILDREN'S HOSPITALS U.S.News RANKED IN 10 SPECIALTIES 2016-17

CANCER | CARDIOVASCULAR | NEUROSCIENCE | ORTHOPEDICS | PEDIATRICS

Bringing discoveries to the bedside

For more than a century, generations of Johns Hopkins researchers have worked tirelessly to unravel the mysteries of disease, push the boundaries of medicine and develop breakthrough treatments that change lives. Our scientists move rapidly to apply discoveries to the care of people who are suffering.

Johns Hopkins revolutionized American medicine with the opening of The Johns Hopkins Hospital (1889) and the Johns Hopkins University School of Medicine (1893) by integrating patient care, medical research and education – the gold standard for modern academic medical centers. Today, the flagship hospital is part of a US$7.7 billion integrated global health enterprise featuring six hospitals, multiple primary and specialty care facilities, and managed care and home care providers in locations spanning Maryland, Washington, D.C., and Florida, in the United States. Advanced treatments – including clinical trials – for a wide range of adult cancers and medical screenings are also available at our Johns Hopkins Singapore location.

A global leader in cancer research and treatment

At the Johns Hopkins Kimmel Cancer Center, research scientists and clinicians in the vanguard of their fields work closely together, quickly transferring new treatments from the laboratory to the clinical setting. World-renowned pathologists here are leaders in identifying cancer cells and determining the correct stage of diagnosis. This provides surgeons and oncologists the information they need to jointly develop the best course of treatment. The Cancer Center also features multispecialty clinics that offer patients comprehensive diagnosis, staging and treatment planning within two days. Cancer experts from a variety of fields have come together in the recently launched Bloomberg-Kimmel Institute for Cancer Immunotherapy. The institute researches ways to redirect patients' highly individual immune systems to target, detect and destroy cancer cells – an approach that is already yielding groundbreaking results.

Gastrointestinal cancer

Gastrointestinal cancers, including colorectal, pancreatic, liver and stomach cancers, have long been a major focus of our investigators, who have completed landmark studies to understand the molecular, genetic and environmental causes of these diseases. Our multispecialty approach and decades-long experience have led to many new treatments and surgical techniques for the most difficult tumors.

Neurosurgery

Johns Hopkins is the birthplace of neurosurgery – it first became a specialty here in 1902. Our internationally renowned faculty, strengthened by our tradition of sharing of ideas across disciplines and combining laboratory-based and clinical research, offers children and adults remarkable new diagnostic capabilities, minimally invasive treatments and personalized care. We particularly excel in treating brain tumors, spinal tumors and neurovascular conditions.

Transplantation

The Johns Hopkins Hospital's Stem Cell/Bone Marrow Transplant Program is an international leader in bone marrow transplantation to treat a variety of diseases, including leukemia, non-Hodgkin and Hodgkin lymphoma, multiple myeloma, solid tumors (breast, ovarian and testicular cancers), anemias and inherited diseases. Johns Hopkins is one of only a few centers in the United States to offer a wide variety of transplantation services for adults and children. Our kidney experts developed a revolutionary method of filtering a patient's blood to enable transplantation from any qualified donor. Since then, our surgeons have performed the first three-way, five-way, six-way and eight-way kidney paired donation transplants in the U.S.

Orthopaedic surgery

Whether seeking care for a sports-related injury; a condition related to ageing, overuse or traumatic accident; or revision surgery, we have an expert who can help improve the patient's quality of life, range of motion and mobility. Our multidisciplinary approach includes physical therapists, pain management specialists, radiologists and oncologists to provide personalized treatment plans.

Customized care for international patients

Johns Hopkins Medicine International's team of more than 100 care experts from over 30 countries serves as the patient's guide to Johns Hopkins' leading-edge medicine. We provide the highest level of service in a compassionate, culturally appropriate manner and have decades of experience in caring for families traveling from the Middle East.

Our dedicated team seamlessly combines medical needs, individual preferences and cultural expectations into a tailored experience that makes Johns Hopkins feel as close to home as possible. We serve as the patient's personal liaison before the visit to coordinate medical services and accommodations. Throughout the stay, we guide the patient to medical appointments, provide interpretation and offer support to make the visit smooth and comfortable.

We take care of our patients' needs before, during and after their visit by fulfilling the promise of high-quality service that allows patients and families to focus on their health and recovery.

■ Appointments and referrals:
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hopkinsmedicine.org/international

BEST CHILDREN'S HOSPITALS
U.S.News & WORLD REPORT
RANKED IN 10 SPECIALTIES
2015-16

Giving new hope to children with metabolic disease

Children's Hospital of Pittsburgh of UPMC is a leading international center for liver transplantation as a treatment for metabolic disease.

As one of the top ten pediatric hospitals in the United States, as ranked by *U.S. News & World Report*, Children's Hospital of Pittsburgh of UPMC is a pioneer in the field of liver transplantation, which has proven to be a life-changing solution for patients with metabolic disease.

Liver transplantation can dramatically reduce symptoms, and in cases like maple syrup urine disease (MSUD), can provide a cure.

Liver transplantation is more than a lifesaving procedure; it's also an attractive approach for improving quality of life for many patients with metabolic disease. In 2004, we developed the protocol for liver transplantation for MSUD. Today, we've performed more transplants on patients with MSUD than any other center in the world. That's more than 65 patients with a 100-percent survival rate. All of these patients show normal liver function, have avoided the risk of neurological complications, and enjoy an unrestricted diet.

We've performed more liver transplants for patients with metabolic disease than any other transplant center.

Since the inception of our program in 1981, our world-renowned experts have performed more than 1,700 liver transplants — that's more than any other center in the United States — with survival rates that exceed national averages. Additionally, we've performed more than 320 liver transplants for patients with metabolic disease, which is more than any other center, including adult facilities. Also, we're leaders in living-donor liver transplants, which eliminate wait times for a deceased donor and can provide excellent outcomes.

Find out more about our excellent outcomes and extraordinary care.

Our experience, expertise, and commitment to innovation and compassionate care are reasons why patients and families from around the world travel to Children's Hospital of Pittsburgh of UPMC. For a free phone consultation with one of our experts on liver transplantation as a therapeutic option for metabolic disease, please visit **www.chp.edu/metabolic** or send an email to **international@chp.edu**

Sources: Internal data, Hillman Center for Pediatric Transplantation; Scientific Registry of Transplant Recipients (www.srtr.org), December 2015 release.

Children's Hospital of Pittsburgh of UPMC